

RESEARCH SCHOOL OF BIOLOGY

NEWSLETTER

NEWS

HONEY BEE EPIGENETICS IN THE SCIENCE MUSEUM IN LONDON

The Science Museum in London is redesigning its award winning biomedical gallery called 'Who am I' to include the latest discoveries in genomics and epigenomics. The next generation gallery, to be launched in 2010, will contain a display on honey bee epigenetic regulation of development and behaviour. **Ryszard Maleszka** (Animal Genomics and Evolution) is interacting with the exhibition content developer to find a way to prepare a visually interesting exhibition.



One objective of this venture that is based on the 2008 Science paper is to increase the awareness of the profound implications of environmental factors, such as diet, on gene expression, non-genetic inheritance and causes of various diseases.

David Miller of James Cook University and **Eldon Ball** (Animal Genomics & Evolution) are leading a project to sequence a coral genome using Illumina high-throughput sequencing technology. The project is being substantially underwritten by the Australian Genome Research Facility and Illumina as a demonstration of the feasibility of genome sequencing with this technology. Other members and former members of the School involved in the project include **David Hayward**, **Sylvain Foret** and **Rob Saint** (Animal Genomics

and Evolution). The project has had considerable coverage in the Australian media. The project is described in a press release from the ARC Centre of Excellence for Coral Reef Studies at http://www.coralcoe.org.au/news_stories/genome.html.

Michael Roderick and **Wee Ho Lim** (Environmental Biology) launched their ANU E-Press *An Atlas of the Global Water Cycle* on 4 August by the Vice-Chancellor, with Prof Will Steffen also speaking. More details can be found in ANU News on <http://news.anu.edu.au/?p=1479>.

An article published in the August issue of *Australian Optometry*, the newspaper of Optometrists Association Australia, describes the work of **Krisztina Valter** and her students (Visual Sciences) with near-infrared light.

Issue 4 | 14 August 2009

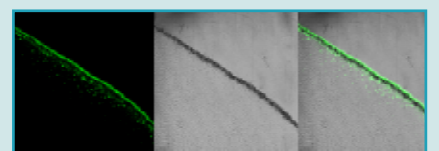
CONGRATULATIONS

Riccardo Natoli and **Vicki Chrysostomou** (Visual Sciences) who have been awarded their PhD's. Vicki Chrysostomou has accepted a postdoctoral position at the Centre for Eye Research Australia in Melbourne.

Stefan Broer, Head BaMBi, has just reached 100 entries in the Public Library of Medicine (PubMed). Most of his research work revolves around biomembrane transport in mammalian cells, parasites and bacteria (no plants as yet). Combining his name with the term "transporter" brings back 86 of the 100 listed publications. Stefan has published more than 70 papers since he started at ANU in 2000.

Murray Badger (Molecular Plant Physiology) was elected (in absentia) a Corresponding Member of the American Society of Plant Biologists at the Annual Meeting in Hawaii in late July.

Rowena Martin (BaMBi), **Rosa Marchetti** (BaMBi), **Anna Cowan** (JCSMR), **Susan Howitt** (BaMBi), **Stefan Bröer** (BaMBi) and **Kieran Kirk** whose paper 'Chloroquine transport via the malaria parasite's 'Chloroquine Resistance Transporter' has just been accepted for publication in *Science*.



This newsletter is distributed fortnightly by email and hard-copy, and archived at <http://insider.rsbs.anu.edu.au/RSBNewsletter>. Please contact **Diane Whitehead** to be added to the mailing list and to submit material for future issues.

NOTICES

WELCOME

Dr Iain Hartley from Stirling University, UK is visiting the Functional Ecology Group for the month of August to work on a paper comparing temperature responses of soil and plant respiration.

Dr Corinna Paeper has begun a postdoctoral project in Dr. Peter Solomon's laboratory (Plant Cell Biology) investigating fungal effector protein localisation in infected wheat. She has returned to PCB (where she completed her PhD) after a stint in BaMBi. **Hulson Zhang** has also started his Honours year in Peter's laboratory, characterising sporulation mechanisms in the wheat pathogen *Stagonospora nodorum*.

PhB Students in the School.

Anton Bubna-Litic, **Emma Thomas** and **Andreas Sarnari** are all maths PhB students who are carrying out research projects in RSB this semester. Anton is working with Ted Maddess (Visual Sciences) on computational vision, Emma is working with Roderick Dewar (Environmental Biology) on entropy-based measures of genetic diversity, and Andreas is working with Georg Weiller (Genomic Interactions) on a bioinformatics project. **Ira Deveson** is a biology PhB student, working with Barry Pogson (BaMBi).

Tom Bennett has joined Rob Magrath (BoZo) working on a field project on how birds recognize alarm signals given by other species. Tom is having a break from undergraduate study at ANU before starting Honours.

GRANTS/FELLOWSHIPS AWARDED

Dr Owen Atkin (Functional Ecology) is a CI on an ARC Linkage Grant. *\$480,000. *July 2009-July 2012. Role of alanine aminotransferase in improved nitrogen use efficiency in cereals. (CI's: B Kaiser (Adelaide), AH Millar (UWA), OK Atkin (ANU), M Tester (Adelaide); PI: JC Kridl (Adelaide)).

Wahida Othman (Paul Cooper's lab, BoZo) has been awarded a Vice-Chancellor's HDR Travel Grant Application to present a Paper at the 6th Asia-Pacific Congress of Entomology (APCE2009) in Beijing, CHINA from 18-23 October 2009.

THANK YOU

Thanks for the great response to the 80's party. We had great attendance from all departments, and the crowd made the evening! Special thanks to the Dance Committee and Happy Hour Organizers: Mitzy Pepper (the radical buffet), Anja Skroblin (the totally gnarly awards), Michael Whitehead, aka Bowie (the radical buffet), Tonya Haff (the original mastermind), Brian Mautz, aka Freddy Mercury (the music and balloons, which were totally wicked), Isobel Brooksmlythe (decorations, which were to the max), Pam Fallow (the totally gnarly awards), Andrew Thornhill

(the booze, which was phat!), Richard Carter (the booze, which was phat!). Renee Catullo (aka Madonna).

HONOURS IN THE RESEARCH SCHOOL OF BIOLOGY

Thursday 27 August, 5.15pm, Robertson Lecture Theatre
Pizza and information session to learn about honours options in the Research School of Biology: Botany & Zoology, Biochemistry and Molecular Biology, Neuroscience. All staff and prospective students are welcome.

SEMINARS

Plant Biology Seminar Series
Wednesday 19 August, 1pm, Robertson Lecture Theatre
'Genomic approaches to identify seed dormancy regulators in *Arabidopsis* and barley' by Dr Jose Barrero Sanchez, CSIRO PI.

Thursday 20 August, 7-8pm, Manning Clark Centre Theatre 1
'Just Add Water' Dr Petere Wothers, Director of Studies, Department of Chemistry, St Catharine's College, Cambridge University.

Wednesday 26 August, 1pm, Robertson Lecture Theatre
Vacuolar pyrophosphatases confer anoxia tolerance in rice by pumping proton across the tonoplast' by Dr Qinxiang Liu, CSIRO PI.

Getting to know the Research School of Biology

THE ARC CENTRE OF EXCELLENCE IN PLANT ENERGY BIOLOGY

The Australian Research Council (ARC) Centre of Excellence in Plant Energy Biology was established in July 2005 as an exciting new enterprise focusing on unlocking the secrets of plant energy organelle metabolism and communication. These secrets underpin plant growth, development and productivity. This research venture integrates seven CI lead research teams of about 80 researchers at three university nodes, The University of Western Australia, The Australian National University and The University of Sydney.

The principal aim of the Centre is the discovery and characterization of molecular components and control mechanisms that drive energy metabolism in plant cells. Our people combine world-leading

expertise in energy organelle biology with complementary expertise in the core technologies of genomics, proteomics, metabolomics,

At ANU, The Pogson and Badger Laboratories are the core participants, contributing expertise relating to chloroplast biology and

Biosciences building will provide a co-location for the Centre together with colleagues from the other Plant Sciences areas. The Centre funding has been extended until the end of 2013 so the new building should enhance the productivity and focus of the ANU Centre node.

The Centre is also taking an active role in the creation of the new NCRIS funded Australian Plant Phenomics Facility node in Canberra, which is shared between CSIRO Plant Industry and ANU. This is adding to the breadth of expertise in Canberra and RSB which will allow questions of plant biology to be addressed from the gene to the organism and field level and add to the unique integrative nature of plant research at ANU.



biochemistry and physiology. Research in the Centre is focused on the use of *Arabidopsis thaliana* as the model plant species.

photosynthesis driven bioenergetics. At present, the two RSB research labs are divided between locations in BaMBi and RSBS, but the new

PAPERS ACCEPTED

Bielby J, Cardillo M, Cooper N, and Purvis A (in press) (2009) Modelling extinction risk in multispecies datasets: phylogenetically independent contrasts vs. decision trees. *Biodiversity & Conservation*.

Doody JS, Freedberg S and Keogh JS (2009). Communal egg-laying in reptiles and amphibians: Evolutionary patterns and hypotheses. *Quarterly Review of Biology*.

Hingee M and Magrath RD (2009). Flights of fear: a mechanical wing whistle sounds the alarm in a flocking bird. *Proc. R. Soc. Lond. B*.

Keogh JS (2009). Evolutionary, behavioural and molecular ecology must meet to achieve long-term conservation goals. *Molecular Ecology*.

Martin RE, Marchetti RV, Cowan AI, Howitt SM, Bröer S and Kirk K (2009). Chloroquine transport via the malaria parasite's 'Chloroquine Resistance Transporter'. *Science*

Poldy J, Peakall R, and Barrow RA (2009). Synthesis of chilogluttones – semiochemicals from sexually deceptive orchids and their pollinators. *Org. Biomol. Chem*.

Reyes-Bermudez A, Lin Z, Hayward DC, Miller DJ and Ball EE (2009). Differential expression of three galaxin-related genes during settlement and metamorphosis in the scleractinian coral *Acropora millepora*. *BMC Evolutionary Biology*.

Shane MW, McCully ME, Canny MJ, Pate JS, Ngo H, Mathesius U, Cawthray GR and Lambers H (2009). Summer dormancy and winter growth; root survival strategy in a perennial monocotyledon. *New Phytologist*.

Smolka J and Hemmi JM (2009). The topography of vision and behaviour. *J. Exp. Biol*.

Sumner J, Webb JK, Shine R, Keogh JS (2009). Molecular and morphological assessment of Australia's most endangered snake, *Hoplocephalus bungaroides*, reveals two evolutionarily significant units for conservation. *Conservation Genetics*.